



CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel: +86-755- 27521059 Fax: +86-755- 27521011 Http://www.sz-ctc.org.cn

Maximum Permissible Exposure Evaluation

FCC ID: 2AYD5-I21M02

According to FCC 1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) Radiation as specified in §1.1307(b)

EUT Specification

Product Name:	Mobile POS
Trade Mark:	iMin
Model/Type reference:	I21M02
Listed Model(s):	N/A
Frequency band (Operating)	BT/BLE: 2402MHz~2480MHz WLAN: 2412MHz~2462MHz U-NII-1: 5150MHz~5250MHz U-NII-2A: 5250MHz~5350MHz U-NII-2C: 5470MHz~5725MHz U-NII-3: 5725MHz~5850MHz GSM 850: UL: 824MHz~849MHz, DL: 869MHz~894MHz PCS 1900: UL: 1850MHz~1910, DL: 1930MHz~1990MHz WCDMA Band II: UL: 1852.4MHz~1907.6MHz, DL: 1932.6MHz~1987.4MHz WCDMA Band V: UL: 826.4MHz~846.6MHz, DL: 871.6MHz~1891.4MHz LTE FDD Band 5: UL: 824.7MHz~848.3MHz, DL: 869.7MHz~893.3MHz LTE FDD Band 7: UL: 2502.5MHz~2567.5MHz, DL: 2622.5MHz~2687.5MHz LTE TDD Band 41: UL: 2557.5MHz~2652.5MHz, DL: 2557.5MHz~2652.5MHz
Device category	☐ Portable (<5mm separation) ☐ Mobile (>20cm separation) ☒ Fixed (>20cm separation) ☐ Others _____
Exposure classification	☐ Occupational/Controlled exposure (S=5mW/cm2) ☒ General Population/Uncontrolled exposure (S=1mW/cm2)
Antenna diversity	☒ Single antenna ☐ Multiple antennas ☐ Tx diversity ☐ Rx diversity ☐ Tx/Rx diversity
Antenna gain (Max)	BT: 1.67dBi 2.4GHz WIFI: 1.67dBi 5GHz WIFI: 2.59dBi GSM 850: 0.6dBi PCS 1900: 0.5dBi WCDMA II: 0.5dBi WCDMA V: 0.6dBi FDD Band 5: -0.6dBi FDD Band 7: -0.2dBi TDD Band 41: -0.2dBi
Evaluation applied	☒ MPE Evaluation ☐ SAR Evaluation

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



Limits for Maximum Permissible Exposure (MPE)

Frequency Range(MHz)	Electric Field Strength(V/m)	Magnetic Field Strength(A/m)	Power Density(mW/cm ²)	Average Time
(A) Limits for Occupational/Control Exposures				
300-1500	--	--	F/300	6
1500-100000	--	--	5	6
(B) Limits for General Population/Uncontrol Exposures				
300-1500	--	--	F/1500	6
1500-100000	--	--	1	30

Friis transmission formula: $P_d = (P_{out} \cdot G) / (4 \cdot \pi \cdot R^2)$

Where

P_d = Power density in mW/cm²

P_{out} = output power to antenna in mW

G = gain of antenna in linear scale

π = 3.1416

R = distance between observation point and center of the radiator in cm

P_d the limit of MPE 1mW/cm². If we know the maximum gain of the antenna and total power input to the antenna, through the calculation, We will know the distance where the MPE limit is reached.

Measurement Result

Band	Frequency (MHz)	Antenna Gain (dBi)	Maximum Power (dBm)	Average Power (dBm)	Tune up tolerance (dBm)	Max. Tune up Power (dBm)	Power Density at 20cm (mW/cm ²)	Limit (mW/cm ²)
BLE	2440	1.67	5.99	/	6±1	7	0.00146	1.000
BT/EDR	2441	1.67	8.86	/	9±1	10	0.00292	1.000
WLAN 802.11b	2437	1.67	22.53	/	22±1	23	0.05831	1.000
WLAN 802.11g	2437	1.67	22.59	/	22±1	23	0.05831	1.000
WLAN 802.11n(HT20)	2437	1.67	22.38	/	22±1	23	0.05831	1.000
WLAN 802.11n(HT40)	2437	1.67	20.37	/	20±1	21	0.03679	1.000
RLAN U-NII-1	5180	2.59	/	15.95	16±1	17	0.01810	1.000
RLAN U-NII-2A	5260	2.59	/	15.05	15±1	16	0.01438	1.000
RLAN U-NII-2C	5580	2.59	/	12.40	12±1	13	0.00721	1.000
RLAN U-NII-3	5745	2.59	/	14.13	14±1	15	0.01142	1.000
GSM850	848.8	0.6	34.45	29.26	29±1	30	0.22842	0.566
GPRS850 (1 Tx slot)	848.8	0.6	34.33	29.15	29±1	30	0.22842	0.566
EGPRS850 (1 Tx slot)	824.2	0.6	28.47	24.62	24±1	25	0.07223	0.549
GSM1900	1909.8	0.5	29.74	25.15	25±1	26	0.08887	1.000
GPRS1900 (1 Tx slot)	1909.8	0.5	29.72	25.23	25±1	26	0.08887	1.000
EGPRS1900 (1 Tx slot)	1850.2	0.5	27.76	23.75	24±1	25	0.07059	1.000
WCDMA Band II	1907.6	0.5	22.70	/	23±1	24	0.05607	1.000
WCDMA Band V	826.4	0.6	21.79	/	22±1	23	0.04558	0.551
LTE Band 5	826.5	-0.6	25.38	/	25±1	26	0.06898	0.551
LTE Band 7	2560.0	-0.2	23.24	/	23±1	24	0.04772	1.000
LTE Band 41	2565.0	-0.2	25.38	/	25±1	26	0.07564	1.000

CTC Laboratories, Inc.

1-2/F., Building 2, Jiaquan Building, Guanlan High-Tech Park, Shenzhen, Guangdong, China

Tel.: (86)755-27521059

Fax: (86)755-27521011

Http://www.sz-ctc.org.cn



For anti-fake verification, please visit the official website of Certification and Accreditation Administration of the People's Republic of China : yz.cnca.cn



The GSM 850, WLAN and BT can transmit simultaneously

GSM 850 Power density at 20cm (mW/cm ²)	WLAN Power density at 20cm (mW/cm ²)	BT Power density at 20cm (mW/cm ²)	Total Power density at 20cm (mW/cm ²)	Power density Limits (mW/cm ²)
0.22842	0.05831	0.00292	0.46480	1

Note

For a more detailed features description, Please refer to the RF Test Report.

*****THE END*****